

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/21/09 has been entered.

Response to Arguments

Applicant's arguments filed 11/20/09 have been fully considered but they are not persuasive. Applicants focus on the amendment to the claims changing the lower limit of the range of zinc to 24 atomic % and state that even though the Ichikawa references teach 19.96 (i.e. 20) atomic % it is not close enough to anticipate or obviate the claimed range. Applicants are directed to MPEP 2144.05 where the discussion of obviousness of ranges can be found. The first portion that is very pertinent to the instant application is *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), which deals directly with metallic alloys. In this case the courts found that the percentage of the metallic elements in the alloy as claimed were obvious over a reference that disclosed percentages that were close but not identical. This is also seen in the instant application. In the Final Rejection dated 9/21/09 it was submitted that 7.58 atomic % Pt is about 10 atomic % Pt since it is sufficiently close to "about 10" and 88.32

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atomic % Pt is about 80 atomic % Pt since it is sufficiently close to "about 80", and 76.06 and 88.75 atomic % Fe are about 80 atomic % Fe since they are sufficiently close to "about 80". Furthermore it is submitted that 19.96 (i.e. 20) atomic % Zn is about 24 atomic % Zn since it is sufficiently close to "about 24". Even more so another portion of MPEP 2144.05 which is pertinent discusses a prior art reference that discloses a range encompassing a somewhat narrower claimed range:

"[A] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). >See also *In re Harris*, 409 F.3d 1339, 74 USPQ2d 1951 (Fed. Cir. 2005)(claimed alloy held obvious over prior art alloy that taught ranges of weight percentages overlapping, and in most instances completely encompassing, claimed ranges; furthermore, narrower ranges taught by reference overlapped all but one range in claimed invention).< However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. *Id.* See also *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2144.08.

In the instant case claim 1 recites:

Pt – 10-80 atomic %

Zn – 24-70 atomic %

Fe – 20-80 atomic %

Prior art teaches

Pt – 8-94 atomic %

Zn – 1-20 atomic %

Fe – 4-89 atomic %

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The above scenario is exactly the same scenario as described in the MPEP passage above. The claimed ranges for all of the metallic elements are broad and the Prior art end points for the ranges for Pt and Fe fall just outside of the claimed ranges (i.e. "A prior art reference discloses a range encompassing a somewhat narrower claimed range") and all but one range are overlapped. Therefore this is a clear case of *prima facie* case of obviousness. Furthermore it is submitted that the ranges of the metallic elements of the alloy are result effective variables and it is within a skilled artisans level of knowledge and understanding how to perform the routine experimentation necessary to optimize the composition of the alloy.

Therefore it is submitted that because the prior art alloy composition ranges either slightly overlap the claimed ranges or are sufficiently close to the claimed ranges, the alloy composition of the prior art will in fact exhibit the same properties as the claimed composition. Again the burden is shifted to applicants to show evidence of unexpected results within the entire claimed ranges, said burden has not been met, see MPEP 2144.05 (III).

III. REBUTTAL OF *PRIMA FACIE* CASE OF OBVIOUSNESS

Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

Applicants also state that the prior art references teach away from the claimed composition, however there is nothing in the references that states that no more than 20 atomic % Zn can be present and in fact applicants admit that there are disclosed examples that teach the atomic % of Zn to be higher than 20%.

Therefore the prior art rejections will be maintained until such time that applicants provide evidence of unexpected results over the entire claimed ranges.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 52084193 hereinafter Ichikawa '193.

Through the provided official translation of Ichikawa '193 and attorney remarks dated 6/19/09, Ichikawa '193 teaches an alloy that is a catalyst that comprises 22-98% wt of PtO (which converts to 7.58-63.57 Atomic % Pt) or preferably 43-96% wt of PtO (which converts to 18.03-88.32 Atomic % Pt), 0.5-8% wt Zn (which converts to 0.54-19.96 Atomic % Zn) or preferably 2.5-7% wt Zn (which converts to 3.25-17.76 Atomic % Zn) and 1.5-70% wt of Fe (which converts to 4.38-88.75 Atomic % Fe) or preferably 1.5-50% wt Fe (which converts to 4.45-76.06 Atomic % Fe), which meets the claim limitations of claims 1, 2, 6 and 14 (whole document and attorney remarks dated 6/19/09 pages 9-12). It is submitted that 7.58 atomic % Pt is about 10 atomic % Pt since it is sufficiently close to "about 10" and 88.32 atomic % Pt is about 80 atomic % Pt

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since it is sufficiently close to "about 80", 19.96 atomic % Zn is about 24 atomic % Zn since it is sufficiently close to "about 24", and 76.06 and 88.75 atomic % Fe are about 80 atomic % Fe since they are sufficiently close to "about 80". Regarding claim 14 having more narrow ranges, since the prior art overlaps the claimed ranges, the burden is shifted to applicants to provide evidence of unexpected results over the entire claimed ranges compared to the prior art. It is further noted that the recitation of "for use as a catalyst in oxidation or reduction reactions" in the preamble of claim 1 is not given patentable weight because said recitation is the intended use of the final product of the instant claims. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). It is submitted that the catalyst alloy of Ichikawa '193 is capable of being used in oxidation or reduction reactions due to the fact that the composition of the catalyst alloy of Ichikawa is the same as instantly claimed and therefore the burden is shifted to applicants to prove in the form of evidence otherwise. The below tables are reproduced from the attorney remarks dated 6/19/09:

Ranges Based on Broadest Disclosure

Element	Low (Atomic %)	High (Atomic %)
Iron	4.38	88.75
Zinc	0.54	19.96
Platinum	7.58	93.57

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Ranges Based on Preferred Disclosure

Element	Low (Atomic %)	High (Atomic %)
Iron	4.45	76.06
Zinc	3.25	17.76
Platinum	18.03	88.32

Ichikawa '193 teaches the claimed invention except for "about 24 atomic %" zinc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the concentration of zinc in the alloy of Ichikawa '193, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. Furthermore it is submitted that because the prior art alloy composition ranges either slightly overlap the claimed ranges or are sufficiently close to the claimed ranges, the alloy composition of the prior art will in fact exhibit the same properties as the claimed composition. See MPEP 2144.05.

Claims 1, 2, 6 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,100,180 hereinafter Ichikawa '180.

Ichikawa '180 and attorney remarks dated 6/19/09 show that Ichikawa '180 teaches an alloy that is a catalyst that comprises 22-98% wt of PtO (which converts to 7.58-63.57 Atomic % Pt) or preferably 43-96% wt of PtO (which converts to 18.03-88.32 Atomic % Pt), 0.5-8% wt Zn (which converts to 0.54-19.96 Atomic % Zn) or preferably 2.5-7% wt Zn (which converts to 3.25-17.76 Atomic % Zn) and 1.5-70% wt of Fe (which converts to 4.38-88.75 Atomic % Fe) or preferably 1.5-50% wt Fe (which converts to

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4.45-76.06 Atomic % Fe), which meets the claim limitations of claims 1, 2, 6 and 14 (column 3, lines 1-14 and attorney remarks dated 6/19/09 pages 9-12, see also reproduced tables above). It is submitted that 7.58 atomic % Pt is about 10 atomic % Pt since it is sufficiently close to "about 10" and 88.32 atomic % Pt is about 80 atomic % Pt since it is sufficiently close to "about 80", 19.96 atomic % Zn is about 24 atomic % Zn since it is sufficiently close to "about 24", and 76.06 and 88.75 atomic % Fe are about 80 atomic % Fe since they are sufficiently close to "about 80". Regarding claim 14 having more narrow ranges, since the prior art overlaps the claimed ranges, the burden is shifted to applicants to provide evidence of unexpected results over the entire claimed ranges compared to the prior art. It is submitted that the catalyst alloy of Ichikawa '180 is capable of being used in oxidation or reduction reactions due to the fact that the composition of the catalyst alloy of Ichikawa '180 is the same as instantly claimed and therefore the burden is shifted to applicants to prove in the form of evidence otherwise.

Ichikawa '180 teaches the claimed invention except for "about 24 atomic %" zinc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the concentration of zinc in the alloy of Ichikawa '193, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. Furthermore it is submitted that because the prior art alloy composition ranges either slightly overlap the claimed ranges or are sufficiently close to the claimed ranges, the

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alloy composition of the prior art will in fact exhibit the same properties as the claimed composition. See MPEP 2144.05.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/
Primary Examiner, Art Unit 1795